

Key to Forest Trees.—It was thought advisable to introduce for twelve weeks, daily, the study of botany into the Sophomore year of the mechanical course at Michigan Agricultural College. This is all the time the student is expected to give to botany, and even this is to be of practical value in the study of woody plants. The first five weeks were occupied in learning how to distinguish the trees of Michigan; mainly by a study of leaves, twigs, buds, outer bark, sections of wood, all aided by a simple microscope. No attention was paid to the flowers. To aid the memory the following artificial classification was devised, and it worked well:

A. *Leaves alternate and two-ranked.*

Basswood.

The Elms: American, Red and Rock.

Mulberry.

Hackberry.

B. *Leaves opposite.*

1. *Simple.*

The Maples: Sugar, Red and Silver.

2. *Pinnately compound.*

The Ashes: White, Black and Blue.

C. *Leaves five to eight ranked.*

1. *Simple.*

Whitewood.

Buttonwood.

Cherry.

Sassafras.

Birches: Yellow, Canoe and Cherry.

Poplars: Cottonwood, Aspen, Large-toothed Aspen.

Willows.

Oaks: White, Red, Black, Yellow, etc.

Chestnut.

Beech.

Ironwood.

2. *Compound.*

1. *Pinnate.*

Black Walnut.

Butternut.

Hickory: Shagbark, Pignut, Bitternut.

2. *More than once pinnate.*

Honey Locust.

Kentucky Coffee Tree.

D. *Conifers.*

1. *Deciduous.*

Larch.

2. *Evergreen.*

Pines: White, Red, Scrub.

Arbor Vitæ.

Spruces: Hemlock, Black, White, Balsam.

Cedar: Red, Juniper.

The other seven weeks were mainly occupied in the use of the compound microscope in the study of a few sorts of woods, as white oak, white ash, sugar maple, and white pine. Some attention was given to fungi acting on wood to produce decay; the different accidents which injure

trees; the effect on the appearance and durability of timber when cut in different directions. Each student wrote an essay on some topic in keeping with those above named.—W. J. BEAL, *Agricultural College, Michigan*, March 23, 1887.

Scoliopus Hallii Watson.—I collected this little Liliaceous plant last week in fine flower. As the floral characters have never been made out, it may be as well to record the following amended description:

Rhizoma very short or none: leaves oval-elliptical to narrowly lanceolate, at length 4–6 inches long, not brown punctate, sessile: pedicels (2–8) 4–6 inches long, slender: outer perianth segments lanceolate or oblanceolate, 3–4 lines long, a line and a half wide, narrowed to a claw below, yellowish green speckled with red outside, striped with dark purple inside, bent at a right angle in the middle so that the upper half is spreading or deflexed; the inner ones are linear-spatulate, shorter than the outer ones, not bent in the middle, but incurved and conivent over the stigmas: stamens 1–1½ lines long, about half as long as the red speckled ovary.—On Silver creek, about a mile above the town of Silverton, at the late Elihu Hall's original locality. In fine flower March 20.—THOMAS HOWELL.

Solidago bicolor L., and var. concolor Torr. & Gray.—While botanizing along the western side of the Green Mountains, in Vermont, last season (1886), I gave particular attention to the golden rods, and collected many interesting things; the most interesting being the above mentioned forms growing from the same root. I found *S. bicolor* L. very abundant, at middle elevations, but saw comparatively little of the var. *concolor*, except in the town of Ludlow, where both forms were in profusion. The remarkable specimen in question consisted of four stalks; two being typical white-rayed *bicolor*, and the other two being none the less typical yellow-rayed *concolor*.—F. H. KNOWLTON, *Washington, D. C.* March 31, 1887.

How humblebees extract nectar from *Mertensia Virginica* DC.—In the October number of the GAZETTE I recorded an observation of the manner in which humblebees extract the sweets from the flowers of *Phytostegia Virginiana* Benth. without entering the corollas, by making a slit at the base with the mandibles. In the April number Mr. G. von Ingen records a similar observation in regard to the common *Petunias*. To-day I observed a similar habit on *Mertensia Virginica* DC. It appears that the insect is well up to the work of splitting corollas; it is done quickly and easily, and if the old slit, made at the former visit, is not easily found, a new one is made. I found corollas that had as many as three parallel slits near the base. As this is near the beginning of the botanizing season, it would be well if botanists generally would keep this in mind, and at the end of the season record their notes. We might thus learn how general this habit is. It would add to the interest if the insects, thus engaged, were captured, and their specific names published with the notes.—J. SCHNECK, *Mt. Carmel, Ill.*